AOIT Computer Systems

Lesson 7

Installing and Upgrading the OS

Student Resources

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Student Resource 7.1

Anticipation Guide: Upgrading Your OS

Student Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: For each of the statements below, circle whether you agree or disagree with the statement, and write one reason to explain your guess. At the end of the lesson, you will fill in the “I learned” space.

|  |  |
| --- | --- |
| The only thing you need to do before installing a new operating system is to buy the operating system. | |
| My guess: | I agree I disagree |
| My reason: |  |
| I learned: |  |
| Updating an operating system happens automatically on your computer, so you don’t have to worry about it. | |
| My guess: | I agree I disagree |
| My reason: |  |
| I learned: |  |
| There are three main stages involved in upgrading an operating system. | |
| My guess: | I agree I disagree |
| My reason: |  |
| I learned: |  |
| After you install a new operating system, all you have to do is learn how to use it. | |
| My guess: | I agree I disagree |
| My reason: |  |
| I learned: |  |

Student Resource 7.2

Reading: OS Installation Planning

The Backus Game Company is a small business with five employees: a game designer, a producer, a graphic artist, a programmer, and a quality assurance expert. The company has just finished a three-game contract with EA Sports to produce computer games based on the lives and stories of top-name athletes, and it is beginning a new contract to produce five Windows Mobile games based on classic sports.

Backus is positioning itself as a leader in touch-screen gaming experiences for cell phones in the Windows Mobile market and as such is developing products for cutting-edge technologies. To best take advantage of these coming technologies, Backus has asked an IT expert to investigate and determine if the entire company should upgrade its operating system from its current Windows Vista to Windows 7.

The current system being run by the company is shown in the table below, along with the system requirements for Windows 7.

|  |  |  |
| --- | --- | --- |
|  | Company Is Currently Running Windows Vista on... | Windows 7 System Requirements |
| **Processor** | 1.0 GHz | 1.0 GHz |
| **Memory** | 1GB RAM | 1GB RAM |
| **HDD free space** | 16GB | 16GB |
| **Other drives** | DVD-R/W | DVD-R/W |
| **Graphics** | NVIDIA GPU GeForce 9300 system board | DirectX 9 with Windows Display Driver Model (WDDM) 1.0 or later driver |

After reviewing its business requirements, the system requirement upgrades, and the added functionality possible with Windows 7, the team has determined that now is the right time to upgrade to Windows 7.

The company team has taken the advice of the IT expert and has decided to go with the 32-bit Windows 7 Ultimate edition. They chose the 32-bit edition because the processors in all five employee machines are 32-bit, not 64-bit, processors. And they chose Windows 7 Ultimate edition because it offers all the features of Windows 7 Professional, with the addition of BitLocker for data security. It also enables them to run programs in any of 35 languages, which will help the company market their new software worldwide.

The IT expert also verified that the NVIDIA GPU GeForce 9300 system board in the computers supports the graphic driver architecture required. The IT expert said, “Basically, if a computer can run Vista successfully, it can run Windows 7.” No other hardware modifications need to be made.

The plan for this upgrade is detailed below.

Pre-Installation Steps

1. Determine the type of installation. The options are as follows:

* Doing an *upgrade* on the existing Windows Vista operating system would preserve existing data files and applications by writing the Windows 7 operating system over the Vista operating system. Upgrading is a good choice, presuming that the existing Vista system is functioning properly and that the user’s data should be preserved.
* A *clean install* is most appropriate in other situations, because it reduces the possibility of errors. This option is referred to as a *Custom* installation during the Windows 7 installation process. The Custom installation option erases your files and settings, but does not reformat the hard drive.

It has been determined that the clean install is most appropriate for everyone except the programmer and the quality assurance expert. Those two employees will upgrade their systems separately.

There are three computers eligible for the clean install, so the IT department has decided to *clone* the systems in order to speed the process on those computers and reduce downtime. Cloning will require creating a fully functional system and then copying the *disk image* of that system to other machines. Cloning will also allow all machines to start as exact duplicates, so troubleshooting problems should be much simpler (because all machines will be exactly the same).

In larger corporate environments, upgrades or new installations would be handled by doing a *deployment*. The install or upgrade would be “pushed” from a server onto client machines, sometimes hundreds at a time. One way to do this is to back up the files from the employees’ machines onto another server. Typically this would be done overnight. Employees would then arrive the next day to find a new OS on their computer, with all their files restored from the copies on the server. But because Backus Game Company is a small business with only five employees, upgrades on the programmer’s and quality assurance expert’s computers and installs on all others will be handled separately.

1. Choose a file system.

NTFS is the only file system you can install on Windows 7, so this is an easy decision. (The file system determines the rules and methods used by the operating system to organize and store files on the computer.) Windows NTFS is the file system for newer Windows machines; it improves reliability and the use of disk space and provides increased security controls.

1. Back up the hard drive.

This is vitally important and will be scheduled as shown in the following table.

Installation Process Schedule

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Clean Install Machines | Upgrade Machines | |
| Pre-Installation Steps | | | | |
| Oct 20–27  STEP 1 | Configure Windows 7 to prepare it for cloning. | Disk cleanup  Virus scan  Spyware scan  Defragmenting | | |
| Nov 1–3  STEP 2 | Require that employees back up all files. | | | |
| Nov 3  STEP 3 | Check employee backups—make sure they did it. Do final tape backup of shared folders on server at midnight on Nov 3. | | | |
| Nov 4  STEP 4 | Review and complete checklist. Take programmer and QA machines off the grid. | | | |
| Installation Steps | | | | |
| Nov 5  STEP 5 | Run cloning program to copy the disk image to other systems. | | Follow package instructions to install Windows 7 operating system. | |
| Post-Installation Steps | | | | |
| Nov 6  STEP 6 | Activate Windows Automatic Update for Windows 7. | | | |
| Nov 7  STEP 7 | Test all machines and peripheral connections. Troubleshoot as necessary. | | | |
| Nov 8  STEP 8 | Have employees test all software programs. Troubleshoot as necessary. | | | |

Student Resource 7.3

Keyword Prediction: OS Installation Planning

Student Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: Follow your teacher’s instructions to use this worksheet as you read Student Resource 7.2, Reading: OS Installation Planning.

|  |  |  |
| --- | --- | --- |
| New Word | My Definition | Text Definition |
| Clean install |  |  |
| Deployment |  |  |
| Clone |  |  |
| Disk image |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Student Resource 7.4

Worksheet: Pre-Installation Plan

Student Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: Research the specifications of your assigned computer and place them in the appropriate column below. Next, review the system requirements that Microsoft has posted for Windows 8. Then in the right column of the table, list any upgrades that you will need for your computer to bring it up to the specifications necessary for Windows 8.

When your table is completed, you will use this information to write a letter to your boss that explains an upgrade you recommend making.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Windows 8 System Requirements** | **Your Computer Specifications** | **Upgrades Necessary** |
| Processor | 1.0 GHz or faster |  |  |
| Memory | 1GB RAM (32-bit) or 2GB RAM (64-bit) |  |  |
| HDD free space | 16GB (32-bit) or 20GB (64-bit) |  |  |
| Other drives | DVD-ROM |  |  |
| Graphics device | DirectX 9 with Windows Display Driver Model (WDDM) 1.0 or higher driver |  |  |
| Screen resolution | 1024 x 768 for Metro apps and 1366 x 768 for snap feature |  |  |

Student Resource 7.5

Writing Frame: Pre-Installation Plan Memo

Student Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: Use the framework below to write a memo to your boss explaining the reasons you’re recommending the requirements you’ve decided on, why you chose the type of install you did, and why you think it’s a good idea to purchase these upgrades.

Dear \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

After researching my assigned computer, I suggest we purchase the following equipment so that the computer meets the minimum system requirements for Microsoft Windows 8:

I would recommend (an upgrade/a clean install) because

Because we are doing (an upgrade/a clean install), we will need to do the following pre-installation steps:

Please feel free to contact me if you have questions or need more information. I look forward to discussing these recommendations with you.

Sincerely,

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Check to make sure your assignment meets or exceeds the following assessment criteria:

* The memo lists the correct equipment to be purchased.
* The memo explains correctly the decision of either Windows 8 minimum or Windows 8 recommended requirements.
* The memo explains the decision of choosing either an upgrade or a clean install.
* The memo explains correctly the appropriate pre-installation steps for the type of install selected.
* The memo is neat and uses proper spelling and grammar.

Student Resource 7.6

Worksheet: Installation Notes

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: As you watch your teacher perform the following actions, write down the individual steps the teacher takes at each stage. You will use this information in a quiz.

|  |
| --- |
| Pre-Installation Steps for an Upgrade |
|  |
| Installation Steps for an Upgrade |
|  |
| Post-Installation Steps for an Upgrade |
|  |